UNESCO SOURCES

N°36 - APRIL 1992

SPACE TO LEARN

WORLD HERITAGE
KEEPING THE MEMORY ALIVE

Readers, we have reserved this page for your comments, suggestions and criticisms. Consider it yours !

"LA GRANDE NUBIADE"

Jean Millérioux
Neuilly-sur-Seine, France

A former member of the Secretariat, I am particularly sensitive to the exemplary manner and the lively and colourful style in which UNESCO Sources each month presents a representative picture of UNESCO activities in the four corners of the world.

Since you devote considerable space to preservation of the world's cultural heritage, and since in the 1960s I was a member of the small team in charge of organizing the International Campaign to Safeguard the Monuments of Nubia, I would like to call the attention of your readers to the recent publication by Stock/Pernoud of a remarkable book entitled "La Grande Nubiade".

It was written by Mme Christine Desroches-Noblecourt, former curator of the Department of Egyptology at the Louvre, who played a vital role in the Nubia Campaign, notably carrying out many missions for UNESCO on the site.

OUTRAGED OVER DUBROVNIK

Maria Boella Cerrato
President of the UNESCO Club
Cuneo (Italy)

Thanks to UNESCO Sources, we learned about the distressing situation in Dubrovnik, former Ragusa, jewel of Venetian civilization, which UNESCO recognizes as a world heritage site and which a fratricidal war has not spared. Moved by this outrage, the young Italians in our UNESCO Club have committed themselves to helping with reconstruction of that which the brutality of arms has destroyed. Thus the proceeds of the UNESCO Carnival Ball held on March 3, 1992, were donated to our friends in Dubrovnik who have lost everything.

NOTHING BUT THE TRUTH!

Herbert Lamm
Longpont (France)

...Over the last 40 years, UNESCO publications have ignored the anti-democratic character of the regimes imposed by the Soviet Union on Eastern Europe countries, by espousing the propaganda of the governments in question.

Your article "Women in Eastern Europe Test for Democracy" reporting on a Prague symposium in UNESCO Sources' January issue, reflects a salutary change in attitude but also calls for a number of comments.

...This article has - one might say finally! - a political nature. The fall of the Berlin wall thus has had repercussions on UNESCO's policy concerning publications...which seems to have evolved towards a doctrine one might qualify as extra-governmental, therefore independant of political powers and, on the contrary, allowing the human conscience to express itself. This is logical, for in a democracy political regimes can alternate and are quite naturally the object of criticism from both inside and outside the country.

A democratic government does not consider criticism published by an international organization of which the country is a member as incompatible with the fact that it pays its dues to this organization and maintains a delegation there, unless there is some question of open and systematic hostility with regard to the country itself rather than towards one of its governments.

According to the article, one of the participants at the symposium invited the others to *"overcome the thirst for demolition of everything done in the past"* and cautioned against *"throwing out the baby with the bathwater."* In other words, she called for recognition of the positive aspects of the former regimes, rejected by the people in Eastern Europe. It is of course intolerable for millions of people to envisage the possibility that they have accomplished nothing during their entire lifetimes, that they have been mistaken all down the line, to feel ashamed about a past in which they believed. But must one for these reasons, forget or be nostalgic about this past, two very similar attitudes?

...If what above all characterized these so-called popular democracies was the lie, we must not now replace a lie with another lie. We must from now on tell the truth, nothing but the truth! And if we have a perfect right to seek and find what was good in the past, we must do it not in the name of nostalgia, but in the name of truth.

UNESCO's Constitution stipulates that "the Organization is prohibited from intervening in matters which are essentially within the domestic jurisdiction of Member States". This rule, which prevailed throughout the United Nations system, was naturally reflected in its publications, along with the interpretation given it by the countries to which you refer. This rule was in fact part of an even more comprehensive doctrine within which all international relations took - and to a great extent- continue to take place.

On the other hand, it must be said that UNESCO Sources was launched at about the time that democratization was in full swing around the world, and above all remember that the magazine is destined for use as an information source and is not an official UNESCO document. Finally, certain participants at the symposium considered that democratization, however unanimously applauded, should not be accompanied by the loss of a great number of advantages for the women of these countries. No more, no less. - Ed.

RULES FOR A GLOBAL VILLAGE

As with all communities, our "global village" needs rules to harmoniously integrate all of its inhabitants and deal with problems confronting them. Hence the multiplication of "international standard-setting instruments" - global laws of a sort - not only to govern relations betweeen States, but also and increasingly, to shore up national legislation.

Since its creation, UNESCO has adopted 68 such instruments. Thirty six recommendations, declarations or charters formulate guiding principles and norms that States are simply invited to follow. On the other hand, the 32 conventions or agreements adopted are legally abiding. However, only one of them has been ratified by more than two thirds of Member States (the World heritage Convention), while a mere five others have been signed by more than half.

Confronted with the paradox of a number of texts adhered to by only a few nations, UNESCO has decided to reinforce its action in this domain. The first step: an inquiry in all of the Member States on the adequacy of these instruments. It would seem that certain of them have been rendered obsolete, the conditions that led to their adoption having changed.

This sorting-out process will be followed by the updating of those conventions that could regain their "usefulness", and their promotion. Numerous States hesitate to ratify these agreements because they are unfamiliar with their contents or over-estimate the constraints and responsibilities that adhesion entails, thus even those that don't need changing must be made known and understood. The procedures by which the States report on the implementation of these instruments must also be simplified and new domains such as bioethics, the cultural rights of minorities and, or course, the environment, catered for.

There remains one other, formidable, obstacle. The growing circulation of people and goods, and the globalization of problems present a case for the reinforcement of international legislation. However, the pre-eminence of national sovereignty prevents the international community from taking any efficient legal action against a State that has violated a convention to which it is party. The "right to interference" is an issue that will occupy the front pages for a long time yet...

René LEFORT

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Schools for all places and peoples.

Electronic warning for science.

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UNESCO SOURCES

READEX FICHE

BOOKS

COMMUNICATION PLANNING REVISITED

Taking a fresh look at the territory first explored in his monograph *Communication Planning for Development* a decade ago, Alan Hancock, Director of the Communication Division at UNESCO, evaluates what has been achieved since, in particular the outcomes of the planning framework he proposed at the time. Working through a series of case-studies, the author analyses the potential and record of communication planning in building up insti-

tutions, networks and systems, and explore the extent to which a planned approach can help in the development of ideas and concepts.

● ***Communication Planning Revisited,*** *by Alan Hancock. Monographs on communication planning 5, UNESCO 1992, 220 pp., 90 FF.*

PEACE AND CONFLICT ISSUES AFTER THE COLD WAR

Presented with an optimistic rose-coloured cover, *Peace and Conflict Issues after the Cold War* addresses not only conflict issues but also the concept of peace culture and the work being undertaken by major research institutions active in the field. With an introductory article, "Democratization and the new international order: unfinished business," by Asbjorn Eide, Director of the Norwegian Institute of Human Rights and including contributions from other eminent international authors, as well as reports on the peace activities of nine international bodies, this book is the most recent to be published in UNESCO's *Studies on Peace and Conflict* series.

● ***Peace & Conflict Issues after the Cold War.*** *Studies on Peace & Conflict. UNESCO 1992, 226 pp., 75FF.*

PERIODICALS

THE UNESCO COURIER

Art in the Street.
Wayside theatre and circus... Outdoor festivities... giant murals that enliven the urban scene...today art is taking to the streets, displaying its wares for all the world to see and recapturing a vitality most often lost over the centuries. *"Once upon a time cities were vivid, colourful places; in the modern world they have become drab,"* editorializes the April **Courier** which then reports, in a lively selection of international articles, on signs of a reaction against this urban monotony. This issue also contains an interview with American writer William Styron.

COPYRIGHT BULLETIN

A second series of articles: "GATT, intellectual property rights and the developing countries," by Gabriel E. Larrea Richarand, President of the Mexican Copyright Institute, "The role of GATT in intellectual property," by Clive Bradley, Chief Executive of the Publishers Association, London, UK, and "Moral rights and international trade agreements" by Francoise Havelange of the French Society of Dramatic Writers and Composers," in this issue (No. 3/1991) present different points of view on the role that could be played by the General Agreement on Tariffs and Trade (GATT) with regard to cultural property.

INTERNATIONAL SOCIAL SCIENCE JOURNAL

Europe in the Making: Global and Regional Perspectives

In this issue: An allegory of Europe. Engraving from the "Cosmography" of Sebastien Münster (1489-1552). Coll. Viollet.

Europe is experiencing a two-fold evolution. On the one hand, the economic and political integration of its Western part is accelerating. On the other hand, with the fall of the iron curtain, Europe now forms an area extending from the Atlantic to the Urals, and from Greenland to Cyprus, although its Central and Eastern regions are undergoing radical transformation with an uncertain outcome. The articles in this issue (No. 131) consider such European developments in a global context.

PROSPECTS

Higher Education: Situation, challenges and prospects. The *Open File* on higher education in this issue (No. 78) of UNESCO's quarterly review of education, is the first of two dossiers on the subject. Written by an international rostrum of specialists, articles explore the changing roles and current crisis linked to the very "idea of the university", trace patterns of development towards the year 2000, address "autonomy and accountability," Open Universities, privatization, issues and problems in developing countries, the university and research, and finally new thinking about the "financing of post-compulsory education". The magazine also features an analysis, by the noted British educator, Margaret Sutherland, of the progress and problems of women's situation, participation and access at different levels of education.

RECORDS

TURKISH CLASSICAL MUSIC

This recording presents the works of 13 composers from the late 14th to the early 19th century selected from among some 30,000 works in the repertoire of Turkish classical art music. This music has left indelible marks, as much in the field of musical genre, tone and rhythm, as in that of instruments and musical forms, in many countries of Asia, Eastern Europe and North Africa whose territories had been crossed by the Turks and where Turkish states had been set up. Performed by the National Choir of Turkish Classical Music, conducted by Nevzad Atlig, the recording is a tribute to 13th century poet Yunus Emre.

● ***Turkish Classical Music.*** *UNESCO Collection/ Auvidis. Cassette 52 FF. Compact 109 FF.*

Publications and periodicals are on sale at the Unesco Bookshop, or by order from Unesco Press, 7 place de Fontenoy, 75700 Paris, and in Member States through national distributors. Catalogue on request.

QUEEN NOOR AT UNESCO

(Photo UNESCO/Inez Forbes)

Her arms full of dossiers, H.M. Queen Noor of Jordan met with Director General, Federico Mayor, at Headquarters on March 16 to discuss cooperation between UNESCO and the Hashemite Kingdom.

"As a scientist, the Director-General has a personal interest in stone morphology, a subject we have often discussed and one with special relevance to the stone monuments of Petra," said the Queen, a graduate in architecture from Princeton University. Both he and the Organization, she said, *"have indicated a serious commitment to working with us on the conservation and preservation of that World Heritage site."*

The meeting also dealt with the role UNESCO could play in promoting education for refugees in the Middle East, establishing a science museum in Jordan and helping *"us make better use of water resources."*

A committed environmentalist, the Queen discussed ways Jordan and UNESCO could work together on environmental concerns, and, in this regard, said she and King Hussein hoped to attend the UN Conference on Environment and Development in Rio de Janeiro next June.

Maha BULOS

A PENCIL, A NOTEBOOK

From March 6 to 13, seven students from two French high schools took a trip to Senegal, carrying in their luggage thousands of notebooks and pencils, destined for 10 underprivileged schools there.

Why notebooks and pencils? *"It's what is missed most in schools here,"* say the travelling teenagers. Some schools don't even have enough material to teach basic reading and writing. *"Each time we give a pencil to a child, it produces a big smile. They're as pleased as punch. Whereas for us, a pencil or a notebook means nothing!"* says Aurelie , one of the visiting high-school girls.

The voyage was the result of the UNESCO operation "A Pencil, a Notebook" which collected enough money from schoolchildren, for the purchase of 20,000 notebooks. A financial firm, the *Générale de Finance*, donated 20,000 pencils. The French government, public television channels, two cities in the east of France - Verdun and Epinal - and Air Afrique also lent their support, while Air France donated the plane tickets.

This solidarity continued all the way to Senegal: lodging with local families and traveling arrangements for the small delegation were managed by Victor Emmanuel Cabrita, director of Dakar's Sainte-Marie de Hann private school, which prides itself on its multi-cultural approach to education.

Cabrita also helped to identify the schools to receive the parcels from France, which were received with much excitement all round.

Inspired by the project, the students from Sainte-Marie de Hann, who are relatively privileged, have now decided to collect pencils and notebooks to give them away to children less fortunate than they are.

DISTRIBUTION AT A SCHOOL IN SUBURBAN DAKAR
(Photo P. Mangin, Collège St-Laurent, France).

The purpose of this campaign was to make *"European children aware of the conditions of their less privileged companions in developing countries,"* says Alain Modoux, Director of UNESCO's Office of Public Information, who coordinated the campaign. *"Many of them do not possess the materials necessary for learning, and yet they have the same thirst for knowledge."*

Having been able to share the lives of local families in Senegal, even for a few days, will undoubtedly help them to better understand the situation.

A pilot operation, "A Pencil, a notebook" will only attain its goal if other schoolchildren elsewhere get mobilized and act.

Sophie-Marie, one of the travelling students, wholeheartedly agrees: *"We absolutely must continue to help them."*

Nicolas MICHAUX
with Diadé BÂ
(Dakar)

● **ROGER REVELLE** was *"a giant in every sense of the word: physically, mentally and spiritually"* said Director General Federico Mayor opening the first Roger Revelle Memorial Lecture at Headquarters on March 13.
This first lecture, presented by John A. Knauss, U.S Undersecretary for Oceans and Atmosphere and First Vice-Chairman of the Intergovernmental Oceanographic Commission was dedicated to Revelle, who helped found the IOC and his life's work. The oceanographer was also among the first to recognize that human activities could influence climate. Revelle, a member of the U.S National Commission for UNESCO (1964-75), died last July at the age of 82.

SCHOOLS "NEED TO BE SHAPED AROUND WHAT GOES ON INSIDE THEM". A CLASS IN RURAL SRI LANKA (Photo UNESCO/Paul Almasy).

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SPACE TO LEARN

Education for all is a goal most countries have today set for themselves. However, the provision of educational facilities is a costly affair beyond the means of many developing countries, each of which also has special characteristics and needs that must be taken into account. While external financing helps, it can only really be effective if coupled with the maximisation of local human and material resources. To this end, the devoted efforts of UNESCO's Educational Architecture Unit and its specialists in the field (p.9), have helped many countries to help themselves in this domain (see below). Apart from providing access to schools for millions of children, its innovative work has often won wide acclaim through projects such as: the design of multi-purpose schools in Venezuela (p.10), girls dormitories in Nepal (p.11) and versatile, low-cost classroom furniture (pp.12&13); or the establishment of a school construction unit in Rwanda's Education Ministry (p.14), and the development of disaster proof schools in Bangladesh and other vulnerable regions of the world (pp.15&16).

Why are buildings important to education ? The French architect Le Corbusier defined a house as a *"machine for living"*. By the same token educational buildings are machines for learning. These architectural machines, however, are not modern day robots where computer programmes, at the pushing of a button, produce educated children and adults. Rather they are passive devices that provide a physical environment where teachers, learners, books and other teaching materials interact to produce people who have both increased knowledge but also a broader understanding of such fundamental values as human rights and international understanding.

What goes into making such machines? Above all they need to be shaped around what goes on inside them. In the 19th century, elitist education in Europe was based upon private tutoring which could take place in the home. As religion played an important role in learning, religious spaces, such as mosques, temples and monestaries were often used for schooling. When, late in that century, mass education was introduced, large lecture halls where one teacher could lecture to 100 or more pupils were the norm. The awakening of pedagogy as a science in the early 20th century created a learner-centred approach that called for smaller groups, and thus the classroom was developed. By the 1960's some educators in the USA, UK and Sweden were arguing that learners were not homogeneous groups and therefore more opportunities for individualistic learning were to be provided. This in turn called for new kinds of spaces: small rooms for seminar discussions and enlarged libraries for individual study.

That was when UNESCO began its first programmes in educational buildings and furniture. A new world was taking shape thanks to the granting of independence to many colonies. And the newly independent peoples had not overlooked Article 28 in the UN Charter that gives every child the right to education. The consequent problems of producing teachers, textbooks and buildings on a vast scale were passed to UNESCO and other UN agencies.

In 1960 an International Conference on Educational Buildings drew up the blue print for UNESCO's action in that field. Knowing that national resources were nowhere near adequate for providing European models of schools, UNESCO set out to see what could be done to help its new Member States to solve the problem on their own terms. Given its limited resources, UNESCO opted to put its resources into an area that could have catalytic action - into research on how to make physical facilities both affordable and effective.

Regional centres for research on educational buildings and furniture were established for Asia and Pacific (located in Indonesia); for the African continent (Sudan) and Latin America and the Caribbean (Mexico). These centres carried out studies on how to improve learning environments and increase cost-effectiveness. In collaboration with governments, these studies were translated into improvement learning environments for children and youth. While governments, using their own resources or through borrowing from international lending bodies, were seen as the major source for financing actual construction, UNESCO took on a role of channelling funds from donor countries. In addition some donor countries gave substantial direct assistance. Over the last 30 years UNESCO research has been widely disseminated to bodies involved in school construction and in that way has substantially shaped international thinking as regards educational buildings and furniture alike.

RESEARCH

To create a functional school it is necessary to see the building and furniture through the eyes and feelings of the children. Learning is impaired if the classroom is too dark to see well, if the benches are so high that legs dangle and blood circulation is cut off, if the noises from the neighbouring class drown out the teacher's voice. If the teacher cannot walk up to every child in a classroom to supervise reading and writing, teaching-learning communications are ruptured. If there is no place to hang up

posters or to place supplementary reading materials, explanatory learning will be reduced. If the child in the back row cannot read the bottom line on the blackboard she/he is deprived of information.

To attack these problems UNESCO brought together educators, ergonomists (specialists in the physical and psychological relationship between man and machine) architects and furniture designers. Tens of thousands of measurements of children have been taken worldwide in order to develop standards of learning environments including light levels, sound levels and furniture and classroom dimensions.

A second issue is to ensure that buildings provide the kind of spaces where subject matter can be taught. The need to provide the basic knowledge required for living in a given society may mean that a traditional hand loom should be available - or it may suggest providing a home economics work room. UNESCO continues to generate technical data sheets or booklets that will help educators and policy-makers to decide on the spaces and equipment that need to be provided to serve this concept of basic education.

STRETCHING FUNDS

Many of the hundreds of millions of out-of-school children are deprived of learning because scarce funds for construction are used on a few costly structures accessible only to a minority. One effective way to reduce costs is to improve the rate of utilisation of schools. Double or triple shifts work well when the school is rigorously managed. During evenings and vacations school buildings can be used for literacy teaching. By designing spaces and furniture for multiple use, classrooms and other spaces can accommodate children or adults comfortably.

It has also been found through UNESCO research that much of the space in schools is hardly used. Corridors, lecture halls and large administration facilities are the least cost-effective investments. By reducing corridors and little used space, classrooms and laboratories may be added that increase a school capacity for no cost.

It was also found that the colonial period policy of creating boarding schools located out of cities are unusually costly since lodging needs to be provided for students and staff alike. Typically only one quarter to one third of the space is actually used for teaching and learning.

Developing countries are too often dependent on more economically advanced countries for modern building materials. Yet if every society is capable of building its domestic shelters why can they not also produce educational spaces? The problem of developing wide classroom spaces with large windows for natural ventilation and natural lighting can often be met by modifying traditional construction methods. The use of such traditions has the added advantage that local communities can contribute labour and materials. Furthermore it is easier for local people to participate in maintenance programmes.

UNESCO won the coveted Aga Khan award for its prototype schools built in Senegal using sand mixed with a minimum of cement and later replicated in other Sahel countries. In Nepal UNESCO helped the Government to develop schools of local stone, mud and timber that cost a mere $ 900 for a five-classroom structure. Mud and bamboo have also been frequently been used in UNESCO supported projects.

Earthquakes, hurricanes and floods are all natural enemies of buildings, and when people are inside such phenomena easily turn into disasters. Heavily engineered solutions are costly and often times beyond the economic reach of developing countries. Research results have been applied in many countries which adapt local construction techniques to provide resistance to major damages.

In Tonga a UNESCO consultant found that a modest increase of 5% over the regular construction budget was sufficient to reinforce new school buildings against hurricane damage. Bangladesh which is plagued with both cyclones and floods has developed a series of prototype buildings that will not only survive the strong hurricane winds but also serve as community shelters and relief centres. An earthquake resistant community centre of mud and bamboo reinforcement has been constructed in Argentina.

A MAJOR SOURCE OF INFORMATION

Thanks to UNESCO's efforts, the third world has become one of the major sources of information on the design of educational buildings and furniture. Through its Educational Architecture Units in Paris and its field offices in Asia and the Pacific, Africa and the Arab States, UNESCO continues to support studies, disseminate technical information and help Member States to solve their own school building problems.

BETWEEN 1974 AND 1978 UNESCO AND UNICEF WORKED TOGETHER TO DESIGN AND BUILD 3,536 CLASSROOMS IN VIETNAM, BENEFITTING SOME 850 000 CHILDREN [illegible] UNESCO

By now it is well understood that, though educational buildings and furniture in the less economically advanced countries are very different in appearance from those in richer countries, the process through which these designs are developed is very much the same. Indeed, when resources for construction are limited, creative ideas on how to achieve lofty objectives are ever more important. In the matter of planning and design of educational buildings and furniture, professionals from everywhere meet as equals, every country has something to teach, and every country has something to learn.

John BEYNON

ARCHITECT AND PHILOSOPHER

After 23 years as UNESCO architect in Africa, Jan de Bosch Kemper is convinced that small is beautiful, people to people is best, and learning space is everywhere

Intense and jovial, as much philosopher as architect, Jan M. de Bosch Kemper is moving towards the end of his first quarter century as UNESCO's school building expert in Africa.

At 51, *"I'm still a bachelor,"* he said. *"married to my work and, as far as I'm concerned, very happy with the association".*

De Bosch Kemper likes to talk. In fact, it's something of a mental marathon to keep up with the man who carries *"oral tradition"* to new heights. Fortunately, however, keeping his high-speed train of thought on track is simplified by the fact that his mind is generally one-track. According to Paris colleague, John Beynon, *"Jan's is a 24-hour-a-day commitment. His full energy goes into creating learning spaces."*

Actually this behaviour is only natural since for Jan Melchior, named for his great grandfather, rector of the University of Leiden at the time of Napoleon, education runs in the family.

Trained in the Netherlands as architect and engineer, de Bosch Kemper already had considerable practical experience there and in Africa when, in 1969, age 28, he was recruited by UNESCO for the job of Junior Architect with the Regional Educational Building Institute in Khartoum, Sudan.

His work there was described as *"outstanding"* in a 1971 UNESCO Memo explaining that both the Institute and the Sudanese Department of Education were *"so anxious to retain his services that they have created a new post of Assistant Architect especially for him".*

Those were heady post-colonial years marked by spectacular growth rates for education in all the sub-Saharan countries. Architects, especially a dedicated international civil servant like de Bosch Kemper, were in constant demand. Thus, in answer to an urgent request from Cameroon in 1976, he was transferred to Yaoundé - at another rung up the professional ladder.

"After that I had a choice," he said *"of going to work for the World Bank in Washington or moving onto an ambitious and complicated school building project in Rwanda."*

After listing all the difficulties involved, UNESCO insisted that, because of his talent and experience, de Bosch Kemper was the man for the job. *"What could I do?"* he reminisces *"My heart already belonged to UNESCO. Still I dreamed of something between Washington and Kigali both professionally and geographically."*

De Bosch Kemper got the chance of landing almost exactly in the middle *"from every point of view"* in January 1978, when he became Head of the Unit for Educational Policy, Innovations and Facilities at UNESCO's Regional Office for Education, a post he still occupies in Dakar, Senegal. But, try to find him there! Responsible for most of Africa south of the Sahara, he is constantly on the move.

In addition to the silver which has crept into his hair, mighty changes have occurred over the past 23 years. *"In the first place,"* he said, *"My computer has replaced the drawing board."* And caressing his new portable, he side-steps to explain how some computers are *"arrogant"* and others *"friendly"* just like the people who use them. *"I can always tell an XX person from a YY person".*

His work has also changed. *"I used to be involved with the problems of individual countries,"* he said. *"My instructions came from Ministers of Education, understandably preoccupied by urgent, immediate needs. Now, I am accountable to the General Conference, to the Assembly of Ministers, which means that to a greater extent I am called upon to deal with the longterm. After all, I would rather UNESCO play the role of watch tower to prevent fires, rather than that of fire department after a catastrophe".*

Placing the exchange of information high among his priorities, de Bosch Kemper organized a seminal "Expo-Dialogue" from January to April 1984 entitled "Le Lieu d'Education est Partout" (Learning Space is everywhere). Seminars and exhibitions presented various solutions to school building problems in different countries of the region, highlighting prototypes developed through UNESCO's programme, notably those making use of local materials and techniques, *"not only to cut down on imports, thus save on precious foreign currency, but because they are generally better adapted to local conditions."*

NORMS AND REALITY

Discussion centred on such themes as harmonizing the norms of school building with reality, or ways and advantages of bringing together the formal and informal sectors, what de Bosch Kemper calls *"the two legs of the same body".*

A case in point, his most recent brainchild, the "Literacy Caravan" of some dozen buses, trucks and cars carried literacy materials and know-how to 10 villages all over Senegal in March and April last year. As a follow-up to this country-wide Fair, Educational Resource Centres are being set up in each of the villages with the help of UNESCO Clubs and the Co-Action programme (see page 17).

Needless to say Jan de Bosch Kemper loves and believes deeply in Africa. *"Or else I wouldn't be here."* Six years ago he acquired a piece of land in *Les Niayes* about 25 km from Dakar where he gently watered the desert into a tender oasis producing vegetables and providing pasture for goats and sheep.

In this *"paradise,"* he spends every rare free moment, organizing evenings of chamber music or simply sitting under one of his mango trees dreaming up better, ever more *"user friendly"* learning spaces for future generations.

Betty WERTHER

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MULTI-PURPOSE SCHOOLS

An experimental school operating in Venezuela since 1990 bases its success on its close ties with the community

Conditions in developing countries call for a new type of school - new, not only in the academic sense, but also with new infrastructure. It must be designed to let the community take advantage of its material facilities to organise non-formal educational activities as well as recreation, sport, cultural events and community functions. The Brisas del Sur Elementary School (Southern Breezes), which is located in Ciudad Guayana, Venezuela, for example, fits the bill.

"The mistake made in the past was to suppose that the solution to the problems of school buildings lay in designing large building complexes," the architect Edward Millán, one of the pioneers of the Brisas del Sur project, told us, adding: *"in fact, if there are no arrangements for bringing in materials and local labour, and if, in addition, there is no management system or organised community which is an integral part of the process, the building loses its usefulness and its life span is much shorter."*

LIKE SISYPHUS ...

The Instituto Nacional de Cooperación, Sección Construcción (National Co-operation Institute, Building Section) (INCE Construcción), is the organisation in Venezuela which is responsible for training human resources in construction work. During their training period the pupils, like the mythical Sisyphus, used to have to demolish the walls which they had barely finished erecting so as to let other students re-use the space and the materials.

Today, instead of building walls to no purpose, they build classrooms and schools throughout the country under a project which first saw the light of day, in 1986, thanks to practical action by the Fundación de Edificaciones y Dotaciones Educativas (Educational Buildings and Staff Foundation) (FEDE) along with INCE Construcción and the community. In this joint activity, FEDE was totally responsible for materials and the transport of workers, while INCE Construcción supplied the labour.

Between 1986 and 1988, 200 classrooms were built throughout the country as part of this school infrastructure design and building concept. The results were very encouraging from the economic, social and institutional points of view, in that this type of action led to a 40 per cent reduction in production costs, it involved the community in school maintenance and it showed that regional organisations could work together efficiently.

This initial experiment with 200 classrooms gave Edward Millán, then President of FEDE, the idea of a more ambitious project for a whole school. Classrooms, playgrounds, sports fields, communal areas, administrative areas and places for non-formal education would all be part of the plans in a novel educational building project.

At that point, UNESCO, through its Educational Architecture Unit, also adopted the idea and together with FEDE, INCE Construcción and the community took up

part of the challenge of building the Brisas del Sur School.

"Meeting of Neighbourhood Association at 5 pm at the school." "Sewing classes starting on Monday at the school." All these notices of meetings are possible at the Brisas del Sur School. There, the neighbourhood association, sports clubs, cultural circles, non-formal education students, not to mention the regular students of the school, all find a suitable setting for their activities.

COMMUNITY IDENTIFICATION

"This school was designed horizontally," the architect Millán told us, *"so as to use the extensive area at our disposal and create open spaces. In this case, a vertical, closed school would be inappropriate. First, because of its surroundings and, second, because the community has identified with the school so closely that we can be fairly sure it will not be attacked by vandals."*

The construction plan for the 200 classrooms and the Brisas del Sur School is self-contained and follows norms laid down by the Ministry of Education and FEDE. However each region may determine what it considers to be the most appropriate building materials for the site and for the locality in which the school is to be built. For example, a large part of the structure of the Brisas del Sur is made of iron, as the metal is produced in this region. In the Andes, stone was used because of the great skill the region's builders displayed in their use of it and the ease with which it could be obtained.

Venezuela has tried to react rapidly to the growing problem of the shortage of school infrastructures, caused, among other things, by the recent sharp increase in school enrolments (800,000 school children in 1958, 8 million in 1992). Nonetheless, 40 per cent of the classrooms in the country are in a bad state of repair.

Multi-purpose schools, far from being a quick solution, entail a slow process which is losing ground to other proposals, but gaining in social effectiveness thanks to the relationship that develops between the school and the community.

For that reason, Edward Millán believes that, for a project such as this, funding is not the most vital factor. More important is the way in which the person or group of persons controlling it succeed in identifying with the needs of the community and with the project itself.

Ana Carolina GRIFFIN

PRIORITY TO WOMEN AND GIRLS

A unique system of specially designed hostels helps provide access to education for girls in Nepal

Getting girls to school and keeping them there for the duration of their education and any higher training is a leading problem in many developing countries. The reasons are many and varied but, in remote rural areas it is often a case of parents not being able to afford to send their daughters to school and pay for their board and lodgings. In an effort to overcome this, UNESCO and His Majesty's Government of Nepal (HMG), in December 1976, signed the Plan of Operation for "Hostel Construction for Girls and Women", to be funded by the Norwegian Government. The aim was to provide secure accomodation in "feeder" hostels built alongside of secondary schools and "main" hostels attached to teacher training centres. Such a set up would thus overcome problems of transport and communication experienced in many parts of the mountain kingdom, ensure access to secondary education for girls and women and provide a greater supply of female primary teachers to, in turn, attract young girls to primary school. UNICEF contributed to the project with an allowance for those girls taking part.

During the first two phases (1976-1987), four main and 14 feeder hostels were built. The third and final phase which terminates later this year will see the completion of six more feeder hostels.

TRADITIONAL STYLES

The building designs vary, from place to place, with the emphasis on local traditional building styles and locally available materials, explained project architect Trine Helle. Up in the alpine areas, for example, where the weather, for the better part of the year, is cold and windy the building is designed to admit sunlight for warmth. In the lower regions the emphasis is on ventilation to let the breeze cross unhindered through the building. In the mountains and mid-hills, stone and mud mortar are used for walls and timber rafters and slates for roof because they are locally available. In the flat, humid Terai region, the walls are built with bricks and cement and the floors and roof are generally put together with concrete slabs. For all the hostels, the furniture, doors and windows come from the locally logged timber.

"We don't waste space and at the same time try to make the hostels as confortable as possible," claimed Ms. Helle. Project engineer Bhesh Nath Ghimire agrees and explains, *"The hostels we build are as maintenance-free as practicable because maintenance is a sector that stands out as a sore thumb in Nepal."* The hostels include quarters for a warden who is reponsible for the girls and a room for a guardian who looks after the building. The bedrooms are always located upstairs, Ms. Helle says, and in order to reassure the occupants - and their parents - the buildings are made safe from earthquakes and other vagaries of nature. How? *"The buildings are comparatively smaller and symetrical, rectangular in shape with length never more than three times the width, and there are tie beam reinforcements, vertical as well as horizontal."* In view of the water shortages in most of the places where the hostels are located the project has found it convenient to construct pit latrines.

The project is one aspect of the much broader "Education of girls and women in Nepal" (EGWN) programme, which has produced about 2500 primary school teachers in the last two decades. Mrs Neslam Basnet, Chief of the Women's Development Project at the Ministry of Education and Culture (MOEC), estimates that about 67% of the trainees were absorbed by the system 10 years ago, but since the enforcement of the rule that says all prospective primary school teacher trainees must have a high school degree (SLC), the figure may have dropped to 45%. *"Prospects for the girls at the moment are mixed,"* she said, adding that it just might pay to incorporate income-generating skill development component in the training curriculum for girls and women who come from remote areas or from disadvantaged communities to make the teaching profession additionally attractive.

The funds from Norway will dry up with the end of the project's third phase later this year. At that point the project aims to hand the hostels over to the schools and institutes or communities concerned. To prepare for this, a major programme of maintenance workshops has been planned this year by UNESCO to highlight the importance of building upkeep and give instruction on how it should be carried out. Three maintenance manuals are also in the works as a backup to the workshops.

The World Bank has already pledged to take over the payment of the girls' allowances to ensure their continued participation.

In the meantime, all are awaiting the upcoming report of the National Education Commission, which has been charged with overhauling the country's education system, and which will obviously have a crucial impact on the programme's future directions. Early indications are that women will be given an even higher priority, thus building on the foundations that have been laid through the hostel project.

Ram PRADHAN

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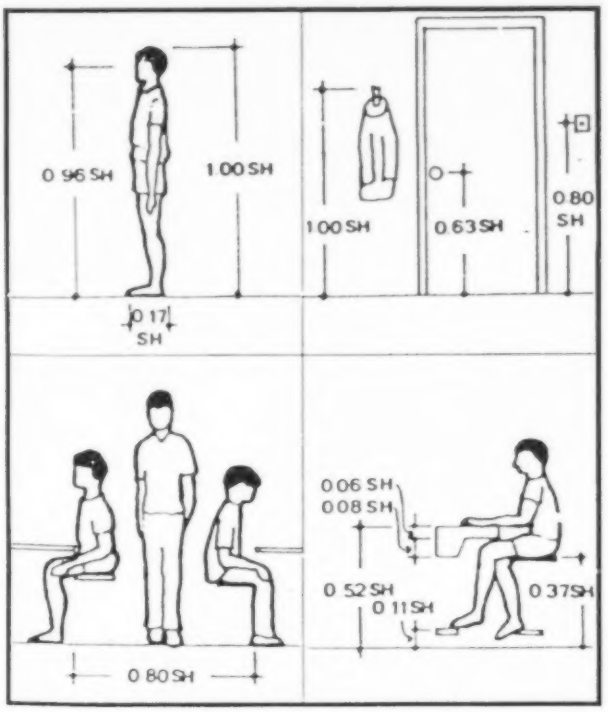
FUNCTIONAL AND EASY TO BUILD

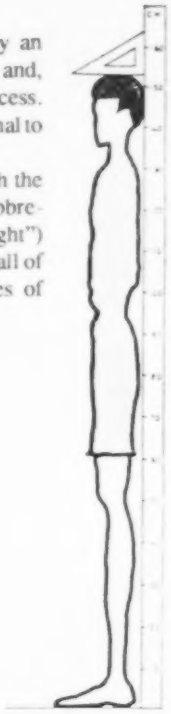
Benches, chairs, desks, shelves, cupboards and equipment for laboratories and practical work: school furniture must be inexpensive, adapted to local needs and able to be built on-site.

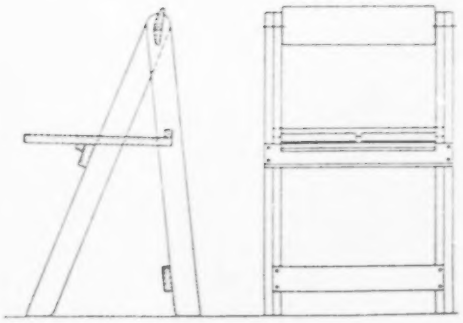


MADE-TO-MEASURE

The dimensions of classroom furniture play an important role in the comfort of the student, and, therefore the efficiency of the learning process. However, these dimensions must be proportional to the size of the pupils.

UNESCO has perfected a method to establish the average size of a sample group of students (abbreviated in this graphic as SH, or "standing height") which can then be used as a basis to calculate all of the dimensions necessary for different types of school furniture and its placement.

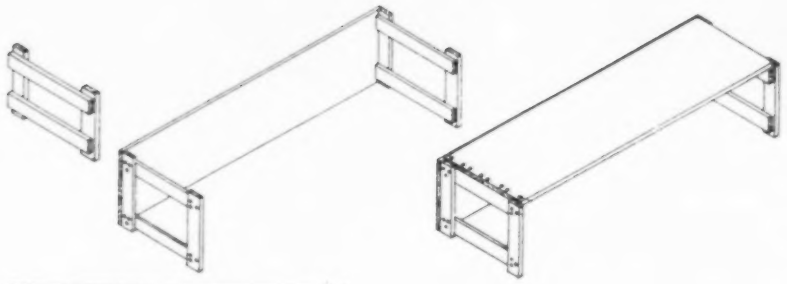


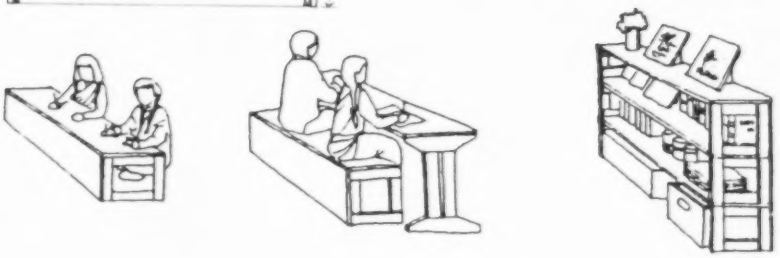


THE BASE MODEL

This chair was originally designed, in 1968, for schools in Asia and proved an enormous success, being easy to construct and store.

With the advances in design that have since been made, it has been altered and improved to counter increasing prices and better serve the students for whom it is destined. The tendancy now is towards benches that seat several pupils together.



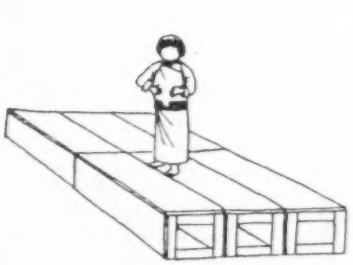


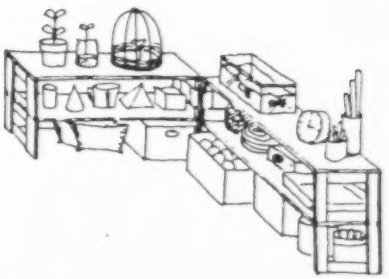
MULTI-PURPOSE

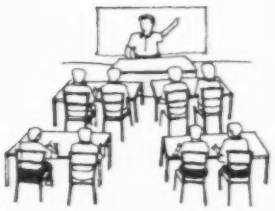
This type of furniture, designed for Nepal, is typical of the type of furniture now being produced by UNESCO's Educational Architecture Unit. It is remarkably versatile, cheaper than the base model chair opposite and of an even simpler construction.

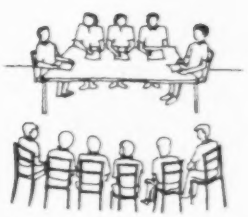
It comes in two different heights and can be used as a working desk for students seated on the ground, or as a bench. It can also be stacked or arranged to form shelving and even a platform.

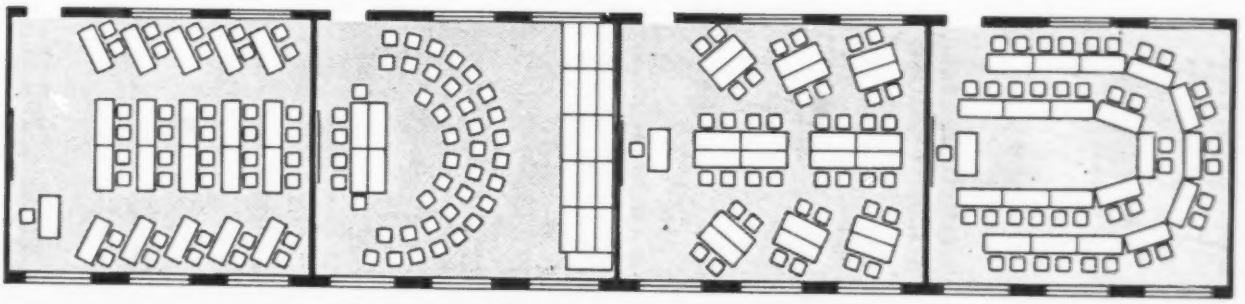
Below, different classroom layouts aimed at improving the "classic" organization.











HELP YOURSELF TO BETTER SCHOOLS!

To cut down the need for outside assistance, UNESCO helps Rwanda reinforce a school construction unit within the Education Ministry

As UN projects go, it went by the in-house label UNDP/RWA/086/011: Assistance in the domain of school construction, following an earlier series of UNESCO projects to help Rwanda *"planify and renovate its education system"*.

Rwanda, covering just over 26,000 sq.km, most of which is located above 1500 m, enjoys one of the continent's most agreable climates. But the small, beautiful country in East Central Africa is also the continent's most densely populated. With seven million people and a high growth rate of 3.4%, it has 275 inhabitants per sq. km of misty highland and deep valley.

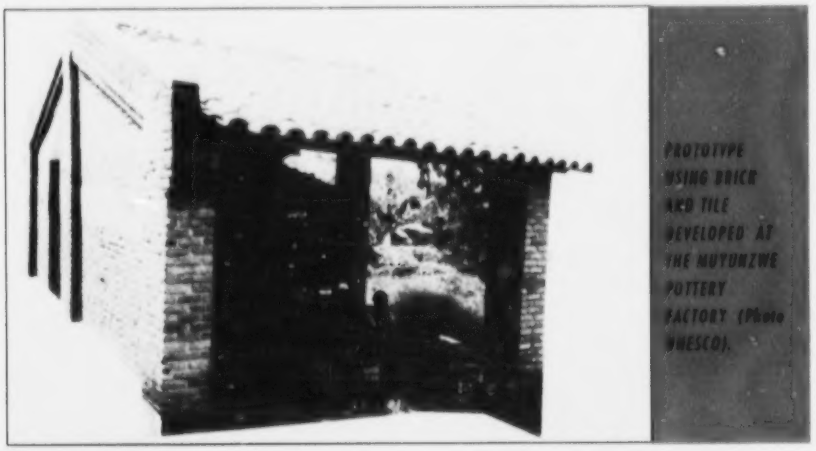
Obviously the school population is growing in the same proportions. In 1990, according to UNESCO's *World Education Report*, about 67% of children were enrolled in eight years of compulsory schooling, the pupil-teacher ratio had improved but still stood at 57, and an estimated 49.8% of adults over 15 were still illiterate.

"Nobody questions education as the key to development," said Rodolfo Almeida, Chief of UNESCO's Educational Architecture Unit, *"but building a good, self-reliant, durable system, especially in a poor country like Rwanda, with a per capita GNP barely over $300, is a long, difficult affair."*

For more than 10 years, a tremendous effort had been made by Rwanda and the international community. So when the government, UNESCO, the executing agency, and the UN Development Programme (UNDP), the funding agency, sat down together in Kigali, the capital, in August 1986, to prepare the three-year (1986-1990) project, *"everyone was determined and committed to reinforcing the School Financing and Construction Office (Direction de Financement et de Constructions scolaires/DFCS) within the Ministry of Education,"* said Almeida. *"helping it pursue an ambitious building programme, and lowering the cost of construction while maintaining quality. The goal was self-sufficiency for the country, but there was so much still to be done!"* Since the main obstacle was a lack of national specialists, Almeida said, training was THE top priority.

As Chief Technical Officer for the project, UNESCO recruited French architect Pierre Oudot who had long experience in Africa and in Asia. Assisting him was an international team of architects, engineers, draftsmen, computer technicians, accountants, etc. from eight countries including Ethiopia, Senegal and Burkina Faso.

Three were UN volunteers and three were "associate experts" (paid by their governments). Consultants in drainage and sanitation, management, surveying, etc. were on hand for limited periods and, to this team, Oudot added four national experts: two architects who had done their basic study in Dakar and Kiev, and two engineers, trained in Rome and Toulouse. Two of them later joined the DFSC which was reinforced with additional staff to a total 19.



PROTOTYPE USING BRICK AND TILE DEVELOPED AT THE MUYUNZWE POTTERY FACTORY (Photo UNESCO).

Intensive training activities were of four types: scholarships for nine national experts to study abroad for periods ranging from one month to a year; a study tour to the Federal School Construction Administration (CAPFCE) in Mexico; 13 seminars on-the-spot or in-service training for members of the DFCS and other national experts, including school principals, draftsmen, etc. on maintenance, brick and wood working, computerization, management, drainage, etc. Much of the training, especially in site supervision and surveying took place on 28 school building sites opened by the DFCS between 1987 and 1988.

"Besides the fact that better trained people perform better, thus improve the cost/benefit ratio," said Almeida *"we tried to reduce costs by, for example, helping the DFCS find more and better ways to use local materials, especially brick and tile, along with prototype buildings using them, and also for timber. In the latter case, we helped develop new ways to season and use a plentiful but very humid and small-trunked species of local tree."*

LOWER CONSTRUCTION COSTS

The result: costs per sq. m were reduced to 20,000 Rwanda francs from 25 to 30,000 FRW using imported materials, a considerable saving in light of the fact that between 1984 and 1992, the DFCS was responsible for a $34,311,111 building programme, financed by the World Bank, the African Development Bank and other sources.

Today, two years after the project ended, the DFCS continues to function, although with far more limited means, resulting in a number of specialists being lured away by higher salaries in the private sector. The now computerized equipment and a data bank of drawings has enabled it to complete or continue construction of five technical schools, an agro-veterinarian college, and 200 primary classrooms foreseen under RWA/86/011.

While Oudot fears the level of national expertise in certain key areas like maintenance and drainage leaves much to be desired, he is optimistic.

"We still see our work as a pilot endeavor," he said. *"Since the country is small and the enthusiasm of the people so great, we are confident that if the effort is sustained Rwanda will serve as a good model for other developing areas."*

B.W.

COPING WITH DISASTER

Floods and cyclones regularly claim thousands of lives and wreak havoc on Bangladesh... and its schools

During the rainy season of 1988, two thirds of Bangladesh disappeared under water. The country's worst flooding in 75 years damaged or destroyed 19,000 schools, colleges, vocational or polytechnic institutions. The damage bill for the educational facilities alone ran to $52.3 million, not to mention the lost school time for millions of children.

Although this was an extreme case, devastating floods are almost a part of daily life in Bangladesh, across which flow the mighty Brahmaputra, Ganges and Meghna Rivers - forming the world's biggest delta where their waters, empty into the Bay of Bengal, itself renowned for cyclonic storms and tidal waves that regularly claim thousands of lives. When in flood, the Ganges can move some 56,000 cubic metres of water per second, while the Brahmaputra shifts an astonishing 70,000 cubic metres per second. Cyclone-driven flooding coming from the Bay can cover an area up to 100 kilometres inland from the southern coast. When the rivers and the Bay unleash their incredible forces, the lives of millions are put at risk.

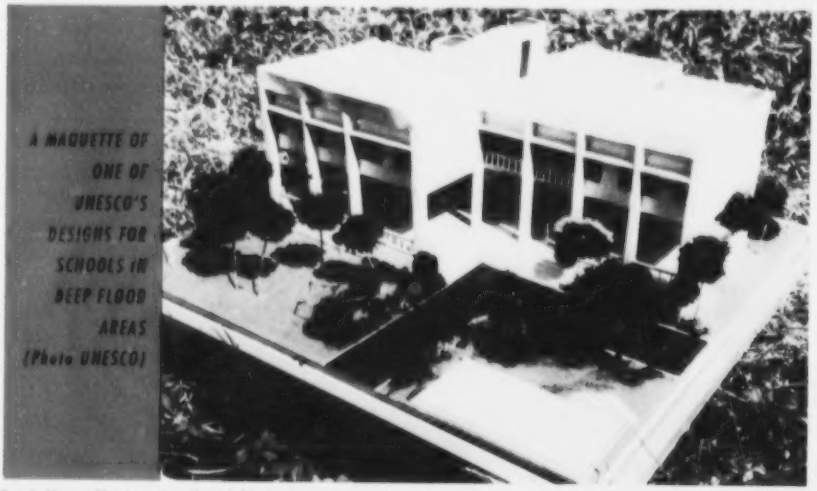
The destruction provoked by the 1988 floods spurred research for a new type of school design able to resist such calamities. UNESCO's vast experience in this area made the Organization a natural partner in this research. An international team of architects headed by John Beynon, then principal architect at UNESCO's regional office in Bangkok, set to work on the project.

SCHOOLS CUM RELIEF CENTRES

Among the criteria to be followed was the need for versatility. Any building left standing in a flood or cyclone tends to serve as a community shelter and relief centre for victims. In the 1988 flood, school buildings provided up to 95 percent of the available relief centres. Consequently, the new schools should be able to fulfil these purposes as well. Bangladesh being among the poorest nations in the world, the buildings also had to be cost effective.

"We had already worked on school design in Bangladesh with architects from the country," says John Beynon, *"but in 1987-88 patterns started to change, and areas that traditionally received very little flooding began to get washed out. This can be largely explained by increasing deforestation in the Himalayas which meant there was less vegetation to soak up the water from melting snows.*

"The results for Bangladesh have been catastrophic, and have meant that the earlier school designs had to be modified. For example, we had to find new materials for buildings that had previously been constructed with rammed earth, and which had literally 'melted' with the increased flooding."



A MAQUETTE OF ONE OF UNESCO'S DESIGNS FOR SCHOOLS IN DEEP FLOOD AREAS (Photo UNESCO)

Another problem that had arisen was the destruction of the furnishings and damage by occupants to those schools that had remained untouched by flooding and served as relief centres. Wooden furniture and shutters were often the only source of energy for cooking food and boiling water for those marooned in the buildings and fighting for their lives.

The architectural team assigned to the problem, and under Beynon's guidance, came up with several proposals that are being built in three proto-type schools of three classrooms each with an emergency assistance grant from UNESCO of $50,000. But even before their completion, the research results and good sense that have shaped their design are now being incorporated into school construction projects supported not only by the Bangladeshi authorities, but by the World and Asian Development Banks as well.

The team came up with two basic school designs for areas hit by shallow and deep flooding, with variations built in for the cyclone prone coastal regions. *"In areas of shallow flooding, we simply build the schools on a mound. In deep flood areas, we put the classrooms on stilts or columns that allow the water to pass underneath. These are more expensive because of the extra cement needed to reinforce the base. In normal times, however, the ground level area in these buildings can also be used for lessons or other activities, thus maximising use of available space" explains the UNESCO architect. "In extremely flood prone areas we use a flat roof that people can climb onto for further protection."*

The stilt schools have basically been designed for the coastal zones and must therefore also be protected from but extremely strong winds, which means the buildings must also be designed to *"stand down rather than up". "There must be a continuous connection from the roof to the foundations," says Beynon "thus the right sort of nails, steel straps, bolts and steel rods must be used to firmly link the roof to the tops of the walls, which are in turn firmly tied to the foundations. This sounds fairly obvious, but on most buildings, the roof is only lightly attached to walls and relies on its weight to keep it in place."*

Local materials are used as much as possible, which despite the country's lack of resources has not proved a major difficulty. Bangladesh has a strong brick-

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making tradition and so bricks have been used to replace the rammed earth walls. This helps to keep the use of expensive, imported, but nonetheless vital cement to a minimum and available for those areas where it is most needed. Steel is also a locally produced commodity and the UNESCO architectural team has suggested it be used instead of timber in classroom furniture. The specialists have thus designed steel tables and chairs that can be easily stacked in a lockable teachers staff-room when the school is being used as a relief centre. In the case of pitched roofs, steel frames can also replace timber beams, thus removing the temptation to using building components for firewood.

LONG EXPERIENCE

UNESCO's experts have also carried out extensive training courses in Bangladesh on construction and design techniques and prepared numerous easy-to-read and well illustrated publications on the subject. If UNESCO's experience in this domain in other disaster prone areas of the world is any guide, the fruits of these efforts will not be long in the reaping. Using proto-types designed and developed on the advice of UNESCO's experts, the Philippines Ministry of Public Works and Highways has, for example, been building typhoon resistant schools since the mid '70s. At the end of the 1985, 239,814 classrooms had been built, and the programme was continuing at the rate of 5,000 a year. Schools no longer need to be *rebuilt* every time a typhoon strikes, thus freeing up funds for new educational centres, and the Philippines now boasts of having one of the largest and most effective school expansion programmes in the region. According to John Beynon the extra cost involved in building a flood/cyclone resistant school *"is between three and 15 per cent"*, which is far less than the cost of replacing a whole classroom or school, not to mention the lives that are lost each time such a disaster strikes.

Sue WILLIAMS
with Mahfuz ANAM (Dhaka)

AND WHEN THE EARTH MOVES ...

Apart from flood and cyclone proof schools, UNESCO's architects have also worked on preparing plans for earthquake-resistant education facilities.

The main problem in such cases is to "tie" the buildings together so that they will not be shaken apart when the ground floor under them môves horizontally. Extensive studies have been undertaken by UNESCO's experts on how this can be best achieved, again, with the emphasis on using local resources where possible to keep costs down. In Mexico, El Salvador, Italy, Greece and Armenia the Organization's specialists have helped assess damages after major quakes, choose better locations for schools in earthquake zones and design buildings less likely to collapse. In Peru, UNESCO's know-how has helped build between 300 and 400 such schools.

"Earthquakes don't kill people, buildings do," points out John Beynon. And in public buildings full of people, such as school classrooms, the consequences of inadequate construction can be particularly tragic.

TO FIND OUT MORE ...

HANDBOOK FOR EDUCATIONAL BUILDINGS PLANNING: by Rodolpho Almeida presents a framework for architects and planners for the development of educational facilities. UNESCO, 1988.

INNOVATION IN MANAGEMENT OF PRIMARY SCHOOL CONSTRUCTION - MULTI-PURPOSE SCHOOLS IN BANGLADESH: by Fecadu Constantinos, looks at a school construction project in Bangladesh, putting the emphasis on appropriate technology and community participation. Complete with architects drawings, colour and black and white photos. UNESCO, 1988.

CYCLONE RESISTANT SCHOOL BUILDINGS FOR BANGLADESH: by the Ministry of Education, Bangladesh, K.J Macks and UNESCO, Bangkok. This document summarizes the training courses on cyclone resistant schools in Bangladesh and proposes a wind-code for single and double buildings there. UNESCO, 1990.

PROTECTION OF EDUCATIONAL BUILDINGS AGAINST EARTHQUAKES: by Professor A. S Arya, this 67-page manual presents a detailed study of earthquakes and their effects on different types of buildings, and how those buildings can be made more resistant to such natural disasters. UNESCO, 1987.

EDUCATION FOR ALL: EDUCATIONAL BUILDINGS AND FURNITURE: this second edition of the newsletter published by the UNESCO's Educational Architecture Unit looks at various projects undertaken by the EAU around the world, from primary school construction in rural Benin to school maintenance in Venezuela. UNESCO, 1991.

A FACILITIES DESIGN GUIDE: by David S. Vickery, this publication focusses on how to provide no cost/low cost facilities and gives information likely to be useful to those able to design purpose-built facilities.. UNESCO, 1988.

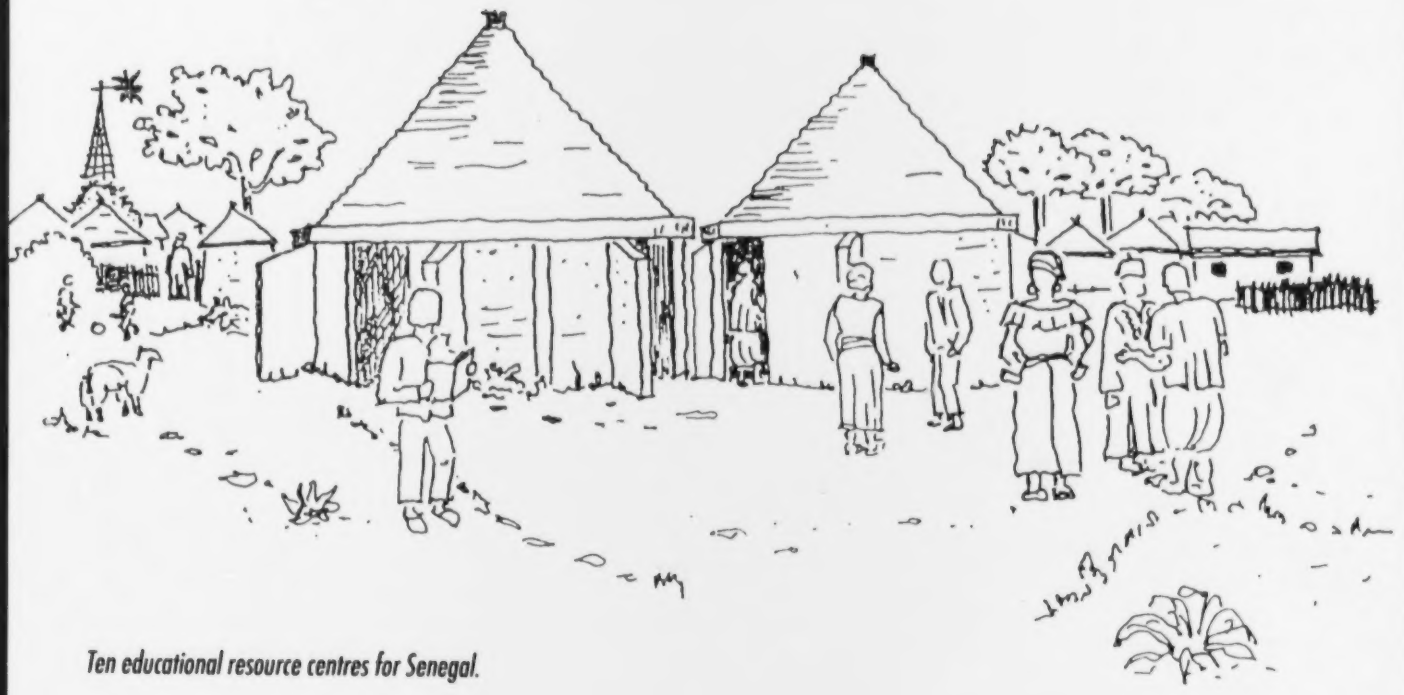
COMMUNITY PARTICIPATION IN THE CONSTRUCTION OF EDUCATIONAL BUILDINGS: by Yona Friedman, this report aims to connect the architect and the laymen through a series of drawings on school design that can be easily understood by the non-specialist. UNESCO, 1984.

INNOVATION IN PRIMARY SCHOOL PRODUCTION - MALDIVES COMMUNITY SCHOOLS: by Mohamed Luthfi and Habeeba Zubair, looks at the problems of small countries and how they have been overcome in the Maldives. UNESCO, 1986.

EDUCATIONAL BUILDING DIGEST: produced by UNESCO's regional office in Bangkok, the Digest looks at specific aspects of school design such as play areas, fire-proofing or thermal comfort.

Publications are available from UNESCO's Educational Architecture Unit.

co-action



Ten educational resource centres for Senegal.

Educational buildings are one of the priorities
of UNESCO's Co-Action Programme, financed by donations.
Your contribution can help.

UNESCO Co-Action Programme, 7 place de Fontenoy, 75700 Paris, France

KEEPING THE MEMORY ALIVE

A new project uses state of the art photo technology to safeguard humanity's heritage

What imprint have the Pharos of Alexandria, the Hanging Gardens of Babylon, the Temple of Artemis and the Colossus of Rhodes left on people's memories? Of the Seven Wonders of the World praised by the ancients, there remains practically no trace - except for the Pyramids of Egypt, the only one still standing.

And if by misfortune the old city of Havana or Cairo, the Mosque at Cordoba in the south of Spain or Mont-Saint-Michel on the French coast were to be wiped out today by some catastrophe, what would keep the memory of them alive and help architects and town planners to restore or rebuild them?

The answer may seem obvious: by now, more than 150 years after the invention of photography, there must be an endless supply of views of the most beautiful sites in the world. And so there is - which is fine if all we want is postcards and tourist snapshots. But not if we are looking for a photographic survey worthy of the name, flawless in quality and scientifically organized to serve as a basis on which specialists can work. A former senior UNESCO official, Gérard Bolla, recalls how he recently asked the prelates of Cologne cathedral in Germany for some photographs and found that all they had were badly printed postcards. What is the position for the old Yugoslav city of Dubrovnik, where certain monuments have been damaged by shelling?

Gérard Bolla has taken up work again at UNESCO as a consultant to help to fill this gap, for the Organization has decided to *"create an iconographical memory, in the form of a bank of images, of the heritage of human kind,"* says Director-General, Federico Mayor.

UNESCO, which has always striven to preserve "world heritage", has four partners at its side in this endeavour: the Barcelona bank Caixa (Catalonia, Spain); the Paris-based photo-agency Gamma; Kodak; and the French public telecommunications service (France-Télécom) - or more particularly its image-transmission network, Image Directe. In addition to each partner's know-how, the Caixa Foundation has contributed some $413,000 and Gamma $165,000. Kodak will supply the films.

The project, dubbed Heritage 2001, which actually started several months ago, was launched officially on March 4 at a press conference at UNESCO's Headquarters. As Olivier Binst, chief editor of Gamma and director of Heritage 2001, explains, it is based mainly on *"digital technology"*. Kodak will provide its expertise in that field using its "photo CD", the photographic equivalent of the musical compact disc. *"The conversion into digital data form is done from films taken with an ordinary camera"*, Andrew Weisman, a Kodak engineer, explains. A *"very high resolution"*, in technical terms *"2,000 x 3,000 pixels, that is six million in all, and 24 bits per pixel, which makes it possible to generate 16 million colours"*, can now be achieved. Digital conversion also makes it possible, by means of a CD player and an ordinary computer, to reprocess the photograph, recentre it or pick up and enlarge a detail at will, without any loss of quality. In view of the storage potential (up to about

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Five prizes of about $20,000 each have been founded for young artists whose talent is coming into full blossom. The **UNESCO PRIZES FOR THE PROMOTION OF THE ARTS** cover two categories. Three will be for the visual arts and will be awarded every two years on the World Day of Cultural Development (May 21), starting next year.
The two others will be for the performing arts and will be awarded within the framework of international or regional cultural events; the first of these being presented for the best performance of Expo Seville 92. The prize money will come from the Higashiyama Fund, set up by Japanese artist Kaii Higashiyama, 83, with the $1.5m proceeds from the sale of one of his most famous paintings.

▼

JAPAN HAS DONATED ONE MILLION DOLLARS to the appeal for the safeguarding of the Angkor monuments in Cambodia. The contribution was announced on March 19 by Japan's deputy foreign affairs minister during a visit to Phnom Penh. The money has been allocated from the Japanese/UNESCO Trust Fund for the Preservation of World Cultural Heritage and will be used to finance four projects including training, an inventory of moveable cultural property, technical assistance to the Angkor Conservation Office and consolidation of endangered monuments.

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"INTER-COMMUNITY EXISTENCE" should be the priority theme of research for a future International Centre of the Human Science». The suggestion comes from participants at a seminar held at UNESCO headquarters from February 13-14 to discuss the creation of such a centre at Byblos (Lebanon). The seminar's recommendations will be submitted to UNESCO's next General Conference in the latter half of 1993.

100 images per disc) a real *"interactive photograph library"* can be created, says Andrew Weisman.

The discs, says Binst, should last 30 to 40 years. But, he adds, once the image has been converted into data form there is nothing to prevent it from being copied ad infinitum. It is also probable that with time this technology, like that of musical compact discs, will become even more reliable and less costly. Even now, it is relatively affordable: players will cost between $600 and $1,000. With the assistance of Image Directe, it will be possible for pictures too to be transmitted worldwide via digital systems and satellite links.

40,000 PHOTOS AND 200 SITES

Five photographic surveys have already been undertaken as part of Heritage 2001, covering the Angkor monuments in Cambodia, Celtic and Viking objects, jewels and gold artefacts of El Dorado (Ecuador, Costa Rica, Peru and Colombia), and views of St Petersburg (formerly Leningrad).

The project will span five years, with 150 renowned photographers visiting 200 sites - from the tropical forests of Costa Rica to the buildings of Oxford - to be selected by agreement between the partners in the operation. UNESCO's World Heritage List will form the basis of this selection but sites that, for one reason or another, have not yet been included on the List, may also figure. Forty thousand photographs in all will be selected.

"The entire project will probably cost several million dollars" says Binst, admitting that he cannot be more specific for the present. *"Fifteen to twenty missions should have been carried out by the end of 1992, and then we'll be able to make a better financial estimate."* Heritage 2001 will, moreover, seek to be self-financing. Gérard Bolla has no doubts about its profitability. He remembers, from his days at UNESCO, a feature on the tomb of Nefertari, one of the most beautiful in Egypt's Valley of the Tombs of the Queens, *"that paid for itself in six months"*.

The pictures will be distributed to the media exclusively through the Gamma network, which will receive a percentage. UNESCO, says its Assistant Director-General for Culture, Henri Lopes, *"will act as depositary for the photographs, making them available to cultural, university and scientific communities - free of charge"*.

Certain Third-World journalists have asked how the press in poor countries will have access to this wealth. *"It's all very well to talk about supertechnology - but we don't even have computers in our country, let alone transmission facilities! And how can we pay?"* an African journalist complained at the end of the press conference. *"The photographs can easily be transmitted on paper"*, assured Olivier Binst, *"and the rates will be adapted to the* media and *their means, as has always been done by photograph agencies"*.

There are still a few grey areas in the project, which - as Sonia Ramzi, a UNESCO official points out - is only in its infancy. Where will the collection of photographs (and rough prints) be kept? The initial photographs are to be kept by Gamma, but the idea of a foundation has been raised. Who exactly will hold the rights of ownership and reproduction? *"At the moment we are at the stage of letters of agreement in principle"*, she explains, *"but it will obviously be necessary to determine the ground rules and establish a legal framework"*.

This official, who does not like the term *"sponsorship"*, considers this campaign to be an example of *"the type of partnership into which UNESCO can enter in many fields, provided that it remains faithful to its mission and to its ethic"*.

Nicolas MICHAUX

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Nominations are now open for the 1992 **UNESCO PRIZE FOR THE TEACHING OF HUMAN RIGHTS**. Awarded every two years, the $10,000 prize is given to an institution, organization or individual who has contributed in an effective and meritorious way to the teaching of human rights or introduced innovative approaches in this field. The 1990 winner was President of the Czech and Slovak Federal Republic, Vaclav Havel.

Nominations may be submitted up until May 31 by Member States or Non-Governmental Organizations having consultative status with UNESCO. The prize will be awarded at UNESCO on Human Rights Day, December 10, at a ceremony presided over by Director-General, Federico Mayor.

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PHYSICAL FITNESS, SPORT AND DEVELOPMENT was the theme of an international congress organized at Nabeul (Tunisia) from February 24-26. Some 200 experts from 70 countries examined a series of projects aimed at encouraging, through sports, the participation of young people in the social, cultural and economic development of their communities. They also addressed the question

SPORT - AN ANTIDOTE FOR DELINQUENCY? (Photo UNESCO/Dominique Roger).

of ethics in sport, the high cost of equipment, and how to improve the status of sports and traditional games, which, it was pointed out, contribute to the cultural heritage and identity of peoples.

MARINE SCIENCE TRAINING KITS

A computer-based learning programme provides cheap and easy access to knowledge for marine scientists around the world

UNESCO's Marine Science Programme has succeeded in putting the oceans of the world into a personal computer! Or, more exactly, satellite images of the oceans onto a series of floppy disks that have been incorporated into three training modules destined for marine scientists.

The modules have been developed to teach university teachers and students in this domain how to analyze remotely sensed data using satellite images of various phenomena such as river discharge in Brazilian coastal waters or phytoplankton distribution in the Arabian Sea.

The first of these training kits was developed under UNESCO's Marine Science Training and Education Programme (TREDMAR) in 1989, the second came out in February last year. The third, "Applications of Marine and Coastal Image Data" has just been released. Eight lessons are included, covering data dealing with river plumes off the Malaysian coast to the seasonal variation of sea ice around the Antarctic continent.

As with the first two, this third module will be distributed *free of charge* to researchers and teachers of in marine science who, in turn, are encouraged to copy the disks for distribution to colleagues and students. They may not be sold.

"The marine sciences have experienced rapid progress in the past few decades," says Dr. Dirk Troost of TREDMAR *"but the diffusion of the information and techniques is both slow and imperfect. The training modules thus provide a unique avenue to distribute knowledge all around the world for about the same cost as a one-year fellowship."*

The beauty of the TREDMAR modules is that they also allow for an exchange between specialists. Several of the lessons appearing in the third module, for example, have been provided by recipients of the first two kits, based on their own research and image data. Those not in a position to contribute lessons are encouraged to send comments and suggestions to TREDMAR. Thus an informal community has been established between the users of this material, at this stage some 350 specialists in 60 countries, most of whom are university teachers involved in satellite oceanography.

The modules use the BILKO software toolkit for image processing, which was specifically designed for TREDMAR by the British firm Pharos Scientific Limited. The software has been upgraded for the third module, which comes with a guide book and floppy disks for personal computers which operate with MS-DOS and are fitted with a colour monitor and graphics adapter.

Sue WILLIAMS

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UNESCO has contributed $300,000 to a new **FUND TO HELP THE RECOVERY OF RUSSIAN SCIENCES** and limit the brain drain threatening the country.
The Fund for the Russian Fundamental Sciences has been established with the Russian Academy of Sciences along with a project of scientific cooperation between the two organizations.
Such cooperation will include exchanges of scientists, helping their access to libraries, organizing meetings and implementing shared projects within various disciplines.
The Russian Academy of Sciences succeeds the All-Union Academy of Sciences and comprises 365 research institutes and a staff of 200,000, making it one of the biggest organizations of its kind in the world.

▼

Only a global and integrated approach to cancer and AIDS will lead to effective treatments and the control of these two killer diseases. Such was the conclusion of some 300 representatives from the fields of medecine, pharmacology, law, philosophy and public health, who met over three days at UNESCO from March 23-25 to discuss ***"CANCER, AIDS AND SOCIETY"***.
The participants stressed that a lack of infrastructure, such as hospitals, testing facilities, and research funds, particularly in the developing world, further heightened the threat posed by both AIDS and cancer. It was also underlined, however, that human behaviour had its part to play. Hence the need for a multidisciplinary approach to these problems, concluded EEC President Jacques Delors at the closing ceremony. AIDS and cancer, he said, *"reveal the qualities and insufficiencies of our health systems, our values and political, psychological and sociological behaviour ...".*

SENTINELS OF THE SEA

Mussels and oysters come into their own as expert monitors of the health of our oceans

They have mysterious names like Mytilus californianus or Mytilus magellanious, Crassostrea brasilana or Crassostrea virginica. But they are simply oysters and mussels originating from different coasts of North and South America (California, south of Chile, Brazil, or Virginia). Just as their kin from other parts of the world, these bivalves hold for scientists—leaving gourmets aside—four decisive benefits: abundance, sedentary habits, a known evolution of their aging process, and especially a capacity to fix in their organism many elements they absorb by "breathing" water around them. In other words, analyzing these *"sea sentinels"* yields a precise measurement of the various substances found in their environment, such as pesticides like DDT or PCB. Due to the toxic nature of such pesticides and the ecological damage they cause, particularly in coastal areas, use of these products was strictly regulated in industrialized countries during the '70s. However, they are being produced and used in increasing quantities in the Third World, where they continue to ravage the environment and threaten the health of human inhabitants.

The purpose of International Mussel Watch is to locate these pollutants throughout the world and to measure their levels as well as their evolution. This study will begin in South America and will later focus on tropical zones and the southern hemisphere. A comparison between the data thus collected and previous results obtained through similar scientific programmes—generally limited to the coasts of industrialized countries—as well as the experience of the North with these chemicals, will allow scientists to predict the harmful impact of such pollution on human beings and the environment. In the long term the project will increase our knowledge of this specific kind of pollution on a worldwide scale, and will thus give decision-makers irrefutable facts to fight it.

A GLOBAL STUDY

But this project is also part of a much broader study of the oceans. The Executive Council of the Intergovernmental Oceanographic Commission which met in Paris in early March, added it to one of its major operations: the Global Ocean Observation System (GOOS); global because observations relate to multiple characteristics of the ocean and to all regions of the world.

The primary goal of GOOS is nothing less than achieving sensible forecasts on the developments of world climate. *"The ocean has a long memory,"* explains IOC general secretary, Gunnar Kullenberg. Its inertia is such that it retains for years traces of climatic variations that can be read through indicators such as sea level, temperature, salinity and density. By combining the *"modeling"* of computer programmes with the observation of such traces, it will be possible to establish cause and effect relationships between a set of ocean characteristics and climatic phenomena. The reappearance of such a set of characteristics will then be enough to show that the related phenomenon will take place again.

This new knowledge will have dazzling consequences. Today, for example, it is possible to forecast a year ahead of time whether the El Niño phenomenon will occur; in other words, whether the Peruvian coasts will see rain or not. Farmers can then choose to plant rice, which is rain greedy, or less thirsty beans.

René LEFORT

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UNESCO and the United States Geological Survey have agreed to work together on **A WORLDWIDE PROGRAMME OF POST-EARTHQUAKE INVESTIGATIONS**. The project began with a meeting of experts from several countries at UNESCO headquarters in Paris from March 10-12.

COLLAPSING BUILDINGS ARE THE MAIN KILLERS IN EARTHQUAKES (Photo UNESCO/Alexis Verentzeff).

It has been estimated that up to 1.3 million people have been killed in earthquakes since 1900 - most of them victims of collapsing buildings.
The project, organized within the framework of the International Decade for Natural Disaster Reduction, aims to gather as much information as possible about earthquakes in order to better prepare for them and thus limit loss of life and damage.

▼

The intergovernmental Oceanographic Commission (IOC) has just published the first edition of **"HARMFUL ALGAE NEWS"**. The newsletter aims to disseminate information on harmful algal events, research results and management programmes, as well as a calendar of conferences and meetings dealing with the problem. It will be published quarterly, in conjunction with UNESCO's International Marine Science Newsletter and distributed free of charge.

☛ *Harmful Algae News, IOC of UNESCO.*

"BIG HEART, SMALL HANDS"

A new exchange programme for youth aims at overcoming North-South barriers

"This was really a different type of trip," said one participant. *"We didn't go to peer at a human zoo, as so many European vacation clubs in Africa do. And we had no intention, despite (or because of) our commitment to Euro-African understanding, of being slogan-shouting political tourists."*

The European team was joined for a time by delegations from the other two African countries that use Portuguese as an official language, Guinea-Bissau and Sao Tomé and Principe. Youth farms, rehabilitation centres for the limbless and sightless, ministry officials, training institutions, youth wings of governing and opposition parties, refugee centres, associations of young people with concerns as varied as employment, ecology and music - these were but some highlights of the Youth Links programme. So were unscheduled and unstructured stops at town markets, out-of-the-way villages, discothèques - anywhere young people gather to talk, dance and sing.

EUROPEAN YOUTH LEADERS LEARN ABOUT A VOCATIONAL TRAINING CENTRE NEAR PRAIA, CAPE VERDE (Photo UNESCO/ Arthur Gillette).

What was the goal, then?

"To get to know and understand the problems and hopes of today's young Africans - our 'peers', as the sociologists put it - and of their organisations, and to see if we couldn't work out new ways of co-operating with them as equals."

The trip, (January 25 to February 8), the first under a new kind of exchange programme called Youth Links North-South, took 15 youth leaders from eight European countries to Cape Verde, Mozambique and Angola. The voyage was jointly sponsored by the Portuguese Youth Ministry, the Council of Europe and UNESCO's Division of Youth and Sports Activities, and came as an eye-opener for young Europeans and Africans alike.

"NO IDEA"

In Mozambique, for example, the Northern group discovered a situation of severe underdevelopment, compounded by more than a decade of civil war that has killed one million people, displaced 4.5 million internal and external refugees, and cost the economy some $18 billion. *"Even if you follow our home media carefully, you have no idea of the extent of the tragedy here,"* remarked a European participant. *"And that tragedy hits young people first and foremost."*

"We don't lack ideas or plans for reconstruction, but our means are tiny," Angola's Vice-Minister for Youth, Alfredo Azevedo Junior told the group: *"We have a big heart but small hands."* Thus follow-up will include bi- and multi-lateral co-operation projects for and with young people, including a return visit by youth leaders from Africa to several European countries later this year.

On a more personal note, one Northern Youth Links participant summed up his own discovery in this way: *"Europe is a kind of mirror image of Africa: it has big hands but often a small heart. This may be one area where our African friends can help us."*

Arthur GILLETTE

● The number of **PRIMARY SCHOOL PUPILS** reaching fourth grade slightly increased during the 1980s worldwide, but those making it through to the final grade remained low in many developing countries. A recently released UNESCO study shows the number of pupils reaching fourth grade in 1988 was 60 % in Latin America and the Caribbean, 62 % in Southern Asia; 75 % in Sub-Saharan Africa, 86 % in Eastern Asia and 92 % in the Arab States. An average of 96 % of enrolled children reached grade four in the developed countries. Retention rates to the final grade of primary education decreased in the majority of countries of Sub-Saharan Africa and remains low in most of Latin America and the Caribbean and in the majority of Southern Asia.

☛ *Section of Statistics on Education.*

▼ ***"WOMEN OF THE WORLD SPEAK THEIR MINDS"*** was the theme of an exhibition organized at Headquarters from March 2-15 to mark International Women's Day (March 8). The exhibition presented a critical view of the living and working conditions of women immigrants through a collection of some 48 photographs, collages, press cuttings, poems from women refugees and eye-witness accounts from Turkish, Iranian, African, Asiatic and Latin American women refugees.

● Ireland's UNESCO Clubs have come up with a first for the environment. **ECO-UNESCO** (Environmental Conservation Organization for Youth - UNESCO Clubs Ltd.), which has over 3,500 members and a network of 42 clubs, is running a series of practical training courses aimed at increasing understanding and appreciation of the environment. Dealing with such topics as the urban environment and methods of pollution monitoring, the courses are open to all and will run through to November.

SAVING MOENJODARO

$7m needed to protect one of the world's oldest cities

Moenjodaro, the "City of the Dead", is under assault. An international campaign launched by UNESCO in 1974 to save the city has begun to run out of "puff". Unless new life is breathed into it, the ground water on the site and its load of corrosive salts risk catching up and rendering the 5,000 year-old mud-brick ruins a mountain of clay.

At an international symposium on Moenjodaro (Karachi, February 23-28), organized within the framework of the UNESCO campaign, the Government of Pakistan estimated that another seven million dollars was needed to complete the work to protect the site.

Built on the left bank of the mighty Indus River, about 400 kilometres from Karachi, Moenjodaro has been described as *"one of the most striking monuments of the dawn of civilization"*.

With its checker-board pattern of streets, extensive drainage and sewerage systems, bath-houses and well-planned homes, the city is an exceptional example of human ingenuity and concern for the collective welfare.

The ruins of this vast city had been protected down the centuries by a covering of earth - like a bee in amber. But the careful digs that laid bare its wonders after discovery in 1922, unleashed forces that burial had kept in check. Moisture from the high lying water table began to seep upwards into the structures carrying with it massive concentrations of salts from the soil. The crystallization of these salts between bricks exposed to the hot sun crumbled the ancient walls, rendering them vulnerable to the onslaught of the elements and threatening destruction within a few decades.

Since 1974, seven million dollars has been channelled through the campaign to Moenjodaro. The Pakistani government has contributed another $12 million and an extra one million dollars in technical assistance has been promised for 1991-1994 by the United Nations Development Programme (UNDP) and Japan.

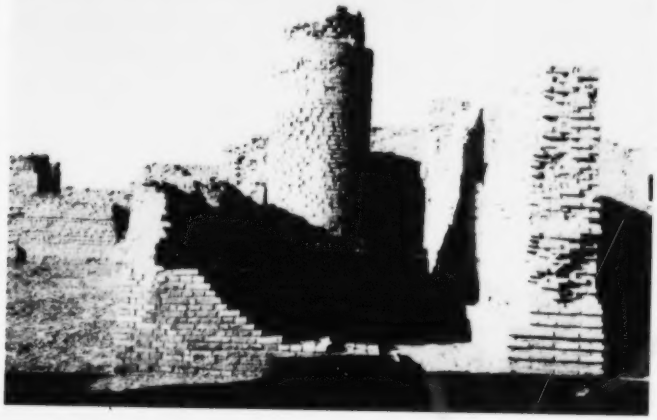
Most of this money has been spent trying to control water encroachment. Twenty six wells have been dug, lowering the ground level water to approximately nine metres. Work has also been carried out to halt the drift of the Indus River bed, which has been moving westward towards the ruins.

However, much remains to be done. Experts believe another six wells are required to stop water level fluctuations and that a sixth spur must be constructed, to control the current and course of the Indus.

"We also need more refined, detailed data on the movement of moisture and chemical and physical action of salt on the walls," says Hideo Noguchi, UNESCO project officer for Moenjodaro. In the meantime, it has been proposed that the walls be stabilized by mud facings and cappings.

The symposium also decided to minimize excavation at the site and concentrate on studying artifacts already unearthed. These include what are believed to be customs or taxation seals in "Indus script" which has not yet been deciphered.

Sue WILLIAMS



MOENJODARO, CAPITAL OF THE ANCIENT INDUS VALLEY CIVILIZATION, TODAY A CRUMBLING RUIN (Photo UNESCO/Alain Mackenzie).

● **THE NOMAD/ALTAIC LEG OF THE ANCIENT SILK ROAD** will be explored during the fourth expedition organized under UNESCO's Integral Study of the Silk Roads: Roads of Dialogue. The trip will begin on July 13 at Khobdo in the heart of the Altai Mountains in western Mongolia. A team of about 60 foreign and Mongolian scholars will travel some 4,000 kilometres by car, bus, horse and camel along the trade route that once linked the West with the Korean Peninsula and Japan. The journey will wind up in Mongolia's capital, Ulan Bator, with a seminar on "Nomads of Central Asia and Silk Roads", from August 3-5.

▼ Construction on the ***NUBIA MUSEUM IN ASWAN,*** Egypt, has now been completed and work on the finishing touches is getting underway. UNESCO's International Campaign for the Establishment of the Nubia Museum has allocated $650,000 for these final tasks as well as the staff recruitment and training. The money will also provide audio-visual equipment and modern systems for data storage and security. The Museum, the first ever devoted exclusively to Nubian culture, will house many of the artifacts salvaged from the Nubian Valley before construction of the High Aswan Dam flooded the area in the early 1960s.

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Editor-in-Chief: R. Lefort. **Associate editors**: B. Werther, S. Williams, C. Breuil. **Assistant Managing Editor**: C. Mouillère. **Lay-out**: G. Traiano, F. Ryan. **Promotion and distribution**: P. Chaillier. **Secretary**: D. Maarek.

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The **EXECUTIVE BOARD** will hold its 139th session at Headquarters from May 18 to 24. In addition to the Organization's programme, the Board will consider setting up a forum to advise it on activities carried out by the Organization in the domain of intellectual cooperation. Fifteen experts will attend a workshop on **SCIENTIFIC AND TECHNOLOGICAL INFORMATION POLICIES** in Austria, Hungary, Italy, Poland, Czechoslovakia and Yugoslavia, in Budapest (Hungary) from May 18 to 22.

VESAK 1992, marking the 2616th anniversary of the **BIRTH OF BUDDHA,** will be celebrated at Headquarters on May 19 by the Centre for Buddhist Studies and the Permanent Delegations to UNESCO of Myanmar, India, Nepal, Sri Lanka and Thailand. Two **CULTURAL ACTIVITIES** will be organized at Headquarters by the Chinese Delegation to UNESCO in the framework of the 20th anniversary of the World Heritage Convention: from May 25 to June 3, an exhibition of traditional Chinese paintings by Zhang Jiuling; and on June 2, a piano recital by prize-winning children aged five to 14, and Ms Chow Ching Ling, a French pianist of Chinese origin. From June 1 to 3, at Headquarters, a meeting of experts will examine the feasibility of creating an **INTERGOVERNMENTAL SOCIAL SCIENCE PROGRAMME** under the auspices of UNESCO. The 7th regional conference of the Programme of Cooperation in **RESEARCH AND DEVELOPMENT FOR EDUCATIONAL INNOVATION** in South and South-East Europe (CODIESEE) will also be held in Bucarest (Romania) from June 1 to 5. The International Jury for the **EUROPEAN CHILDREN'S DRAWING CONTEST** on the theme "Youth in Action: Prevention of Drug Abuse," organized with the City of Paris, will meet at Headquarters on June 11 and 12. A Meeting of Experts on **EDUCATION INDICATORS** and the International Standard Classification of Education (ISCED) will be held at Headquarters from June 11 to 17.

OUR NEXT ISSUE, on the eve of the UN Conference on the Environment and Development (Rio de Janeiro, Brazil, June 1 to 12), will focus on the institutional and sociological obstacles which continue to aggravate the environmental crisis.

SOURCES